

*40* years  
*1968-2008*



Docket No.: 336549US



COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

ATTORNEYS AT LAW

RE: Application Serial No.: 09/139,307  
Applicants: SHIRAKAWA, Takahashi  
Filing Date: August 24, 1998  
For: THERMAL HEAD  
Group Art Unit: 2861  
Examiner: Tran

SIR:

Attached hereto for filing are the following papers:

**Issue Fee Transmittal**  
**Letter Submitting Replacement Drawing Sheets**  
**Notice of Allowability Dated June 3, 1999 (copy)**  
**PTO Form 948 Dated November 12, 1998 (copy)**  
**6 Replacement Drawing Sheets**

Credit card payment is attached hereto in the amount of **\$1,510.00** to cover any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. **15-0030**. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.

Richard L. Treanor  
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SIR:

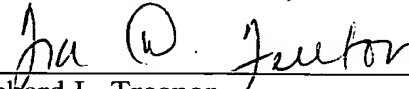
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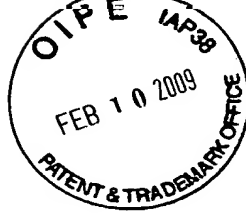
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Docket No.: 336549US



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION: SHIRAKAWA, Takashi, et al.

SERIAL NO.: 09/139,307

FILED: August 24, 1998

FOR: THERMAL HEAD

LETTER SUBMITTING REPLACEMENT DRAWING SHEET(S)

COMMISSIONER FOR PATENTS  
Alexandria, VA 22313

SIR:

Responsive to the below indicated communication, the following drawing sheets are submitted herewith:

- ☒ 6 Replacement Drawing Sheets ☐ \_\_\_\_\_ New Drawing Sheets  
☐ \_\_\_\_\_ Annotated Drawing Sheets  
☐ Official Action dated \_\_\_\_\_  
☒ Notice of Allowability, dated June 3, 1999 (2-pages, see attachment)  
☒ PTO (948), dated November 12, 1998 (1 page, see attachment)  
The changes and/or modifications made include the following:

The attached drawings Figs. 1-10 are Replacement (Formal) Drawing Sheets in response to the Notice of Draftperson's Patent Drawing Review (PTO 948), dated November 12, 1998 requesting new drawing sheets, along with page 2 (3<sup>rd</sup> paragraph) of the Notice of Allowability, dated June 3, 1999, indicating that Figs. 7A & 7B are missing and correction is required.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.

Richard L. Treanor  
Registration No. 36,379

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UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
09/139,307	08/24/98	SHIRAKAWA	T 9281/3130

WILLIAM F PRENDERGAST  
BRINKS HOFER GILSON & LIONE  
P O BOX 10395  
CHICAGO IL 60610

MM61/0603

EXAMINER
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TRAN, H ART UNIT	PAPER NUMBER 4
---------------------	----------------

2861  
DATE MAILED:

06/03/99

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

COPY

NOTICE OF ALLOWABILITY

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

- ☐ This communication is responsive to \_\_\_\_\_
- ☒ The allowed claim(s) is/are 1-8
- ☐ The drawings filed on \_\_\_\_\_ are acceptable.
- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☒ All ☐ Some ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☒ received in Application No. (Series Code/Serial Number) 8/697,153
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \*Certified copies not received: \_\_\_\_\_

- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

- ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

- ☒ Applicant MUST submit NEW FORMAL DRAWINGS

- ☐ because the originally filed drawings were declared by applicant to be informal.

- ☒ including changes required by the Notice of Draftperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No. \_\_\_\_\_

- ☐ including changes required by the proposed drawing correction filed on \_\_\_\_\_, which has been approved by the examiner.

- ☐ including changes required by the attached Examiner's Amendment/Comment.

☒ Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson.

- ☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

Attachment(s)

- ☒ Notice of References Cited, PTO-892
- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☒ Notice of Draftperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Interview Summary, PTO-413
- ☐ Examiner's Amendment/Comment
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☒ Examiner's Statement of Reasons for Allowance

Huan Tran

Huan Tran  
Primary Examiner

Art Unit: 2861

**DETAILED ACTION**

***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 08/697,153, filed on 08/20/96.

***Oath/Declaration***

2. Receipt is acknowledged of the executed Declaration and the appropriate filing fee.

***Drawings***

3. The drawings are objected to because Figs. 7A and 7B are missing from the 5 sheets of drawings filed which include Figs. 1-5, 6A-6C, 8 and 9. Correction is required.

***Allowable Subject Matter***

4. Claims 1-8 are allowed.

5. The following is an examiner's statement of reasons for allowance:

Prior art of record, in particular prior art to Shirakawa (US Patent No. 5,477,266) does not teach or suggest a second interlayer insulation layer comprised of insulating ceramic formed on the upper surface of the first interlayer insulation layer. Figs. 1-4 of Shirakawa shows a thermal head and a method of manufacturing, wherein an

9/139,307

NOTICE OF DRAFTERPERSON'S  
PATENT DRAWING REVIEW

The drawing filed (insert date) 8/24/98:

A. ☒ not objected to by the Drafterperson under 37 CFR 1.84 or 1.152.B. ☒ objected to by the Drafterperson under 37 CFR 1.84 or 1.152 as indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawings must be submitted according to the instructions on the back of this notice.

COPY

1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings:  
Black ink. Color.  
Color drawing are not acceptable until petition is granted.  
Fig.(s) \_\_\_\_\_  
Pencil and non black ink is not permitted. Fig(s) \_\_\_\_\_
2. PHOTOGRAPHS. 37 CFR 1.84(b)  
Photographs are not acceptable until petition is granted,  
3 full-tone sets are required. Fig(s) \_\_\_\_\_  
Photographs not properly mounted (must be on board or photographic double-weight paper). Fig(s) \_\_\_\_\_  
Poor quality (half-tone). Fig(s) \_\_\_\_\_
3. TYPE OF PAPER. 37 CFR 1.84(e)  
Paper not flexible, strong, white and durable.  
Fig.(s) \_\_\_\_\_  
Erasures, alterations, overwritings, interlineations, folds, copy machine marks not acceptable. (too thin)  
Mylar, vellum paper is not acceptable (too thin).  
Fig(s) \_\_\_\_\_
4. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable sizes:  
21.0 cm by 29.7 cm (DIN size A4)  
21.6 cm by 27.9 cm (8 1/2 x 11 inches)  
All drawings sheets not the same size.  
Sheet(s) \_\_\_\_\_
5. MARGINS. 37 CFR 1.84(g): Acceptable margins:  
Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm  
SIZE: A4 Size  
Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm  
SIZE: 8 1/2 x 11  
Margins not acceptable. Fig(s) \_\_\_\_\_  
Top (T) \_\_\_\_\_ Left (L) \_\_\_\_\_  
Right (R) \_\_\_\_\_ Bottom (B) \_\_\_\_\_
6. VIEWS. 37 CFR 1.84(h)  
REMINDER: Specification may require revision to correspond to drawing changes.  
Views connected by projection lines or lead lines.  
Fig.(s) \_\_\_\_\_  
Partial views. 37 CFR 1.84(h)(2)  
Brackets needed to show figure as one entity.  
Fig.(s) \_\_\_\_\_  
Views not labeled separately or properly.  
Fig.(s) \_\_\_\_\_  
Enlarged view not labeled separately or properly.  
Fig.(s) \_\_\_\_\_
7. SECTIONAL VIEWS. 37 CFR 1.84(h)(3)  
Hatching not indicated for sectional portions of an object.  
Fig.(s) \_\_\_\_\_  
Sectional designation should be noted with Arabic or Roman numbers. Fig.(s) \_\_\_\_\_
8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i)  
Words do not appear on a horizontal, left-to-right fashion when page is either upright or turned, so that the top becomes the right side, except for graphs. Fig.(s) \_\_\_\_\_  
Views not on the same plane on drawing sheet. Fig.(s) \_\_\_\_\_
9. SCALE. 37 CFR 1.84(k)  
Scale not large enough to show mechanism without crowding, when drawing is reduced in size to two-thirds in reproduction.  
Fig.(s) \_\_\_\_\_
10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(l)  
Lines, numbers & letters not uniformly thick and well defined, clean, durable and black (poor line quality).  
Fig.(s) 8
11. SHADING. 37 CFR 1.84(m)  
Solid black areas pale. Fig.(s) \_\_\_\_\_  
Solid black shading not permitted. Fig.(s) \_\_\_\_\_  
Shade lines, pale, rough and blurred. Fig.(s) \_\_\_\_\_
12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.84(p)  
Numbers and reference characters not plain and legible.  
Fig(s) 1, 3, 4, 9, 1, 4, 10  
Figure legends are poor. Fig.(s) 1, 4, 10  
Numbers and reference characters not oriented in the same direction as the view. 37 CFR 1.84(p)(3) Fig.(s) \_\_\_\_\_  
English alphabet not used. 37 CFR 1.84(p)(3) Fig.(s) \_\_\_\_\_  
Numbers, letters and reference characters must be at least .32 cm (1/8 inch) in height. 37 CFR 1.84(p)(3) Fig.(s) 5, 1, 4, 3
13. LEAD LINES. 37 CFR 1.84(q)  
Lead lines cross each other. Fig.(s) \_\_\_\_\_  
Lead lines missing. Fig.(s) \_\_\_\_\_
14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(u)  
Sheets not numbered consecutively, and in Arabic numerals beginning with number 1. Fig.(s) \_\_\_\_\_
15. NUMBERING OF VIEWS. 37 CFR 1.84(u)  
Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig.(s) \_\_\_\_\_
16. CORRECTIONS. 37 CFR 1.84(w)  
Corrections not made from PTO-948 dated \_\_\_\_\_
17. DESIGN DRAWINGS. 37 CFR 1.152  
Surface shading shown not appropriate. Fig.(s) \_\_\_\_\_  
Solid black shading not used for color contrast.  
Fig.(s) \_\_\_\_\_

COMMENTS

REVIEWER

DATE

TELEPHONE NO.

ATTACHMENT TO PAPER NO.

APPLICANT'S COPY